IN THE CLAIMS:

Please amend the claims as follows:

1. (Cancelled)

2. (Currently Amended) A filter bank ~~as claimed in claim 1, wherein said~~ for processing a baseband signal of a received continuous phase modulated signal with an integer modulation index, the filter bank having filter bank outputs ~~are~~ coupled to a decision module, said filter bank outputs providing a plurality of decision variable values each representing a likelihood value of a symbol, from a group of predefined symbols that are likely to be present in the continuous phase modulated signal, said filter bank having filter units each having an impulse response determined by a complex main pulse containing a majority of signal energy of one of the predefined symbols that is likely to be in the continuous phase modulated signal, and wherein in use the decision module processes the decision variable values to provide a symbol at the output thereof, the symbol being one of the group of predefined symbols.

3. (Currently Amended) A filter bank as claimed in claim 2, and wherein the decision module in use provides the symbol for non-coherent demodulation based on a largest value of the decision variables.

4. (Original) A filter bank as claimed in claim 3, wherein the decision module in use provides the symbol by effecting the calculation:

$$\left| \int_0^{LT} r(t+NT) S^*_{a_N}(t) dt \right|$$

wherein $r(t)$ is the baseband signal; $S_{a_N}(t)$ is the complex main pulse associated with symbol a_N in the time interval $[NT,(N+L)T]$; T is the symbol interval; N is an integer time index; and L is the non-constant duration of the continuous phase modulated signal's phase shift function in symbols.

5. (Original) A filter bank as claimed in claim 2, wherein the decision module in use provides the symbol for coherent demodulation based on estimated fading channel coefficients and a largest value of the decision variables.

6. (Original) A filter bank as claimed in claim 5, wherein the decision module in use provides the symbol by effecting the calculation:

$$(-1)^{Nh}\,\mathrm{Re}\left[C^{*}(NT)\int_{0}^{LT} r(t+NT)S_{a_N}^{*}(t)dt\right]$$

wherein $C(NT)$ is the channel coefficient at time NT; $r(t)$ is the baseband signal; $S_{a_N}(t)$ is the complex main pulse associated with symbol a_N in the time interval $[NT,(N+L)T]$; T is the symbol interval, N is integer time index; and L is the non-constant duration of the continuous phase modulated signal's phase shift function in symbols, and h is the modulation index.

7. (Currently Amended) A filter bank as claimed in claim ~~1~~ 2, wherein said filter bank is a matched filter bank.

8. (Currently Amended) A filter bank as claimed in claim ~~1~~ 2, wherein each of said filter units has an impulse response comprising a window function defined as:

$$\prod_{\substack{i=-L+1 \\ i\neq 0}}^{L-1} \frac{\sin M\varphi(t-iT)}{M\sin\varphi(t-iT)}$$

wherein M is the number of all possible symbols in the continuous phase modulated signal, T is the symbol interval, L is the number of symbol intervals and $\varphi(t)$ is the phase shift function.

9. (Original) A filter bank as claimed in claim 8, wherein, said impulse response is also based on a phase shift function $a_N\varphi(t)$.

10. (Original) A filter bank as claimed in claim 9, wherein said impulse response is based upon the function:

$$\prod_{\substack{i=-L+1 \\ i\neq 0}}^{L-1} \frac{\sin M\varphi(t-iT)}{M\sin\varphi(t-iT)} \cdot e^{ja_N\varphi(t)}.$$

11. (Cancelled).

12. (Currently Amended) A receiver for receiving a continuous phase modulated signal with an integer modulation index, the receiver comprising:

a filter bank for processing a baseband signal of the continuous phase modulated signal, the filter bank having filter bank outputs for providing a plurality of decision variable values each representing a likelihood value of a symbol, from a group of predefined symbols that are likely to be present in the continuous phase modulated signal, said filter bank having filter units each

having an impulse response determined by a complex main pulse containing a majority of signal energy of one of the predefined symbols that is likely to be in the continuous phase modulated signal; and

a decision module having inputs coupled to the filter bank outputs, wherein in use the decision module processes the decision variable values to provide a symbol at the output thereof, the symbol being one of the group of predefined symbols [~~A receiver as claimed in claim 11~~], and wherein the decision module [~~in use~~] provides the symbol for non-coherent demodulation based on a largest value of the decision variables.

13. (Original) A receiver as claimed in claim 12, wherein the decision module in use provides the symbol by effecting the calculation:

$$\left| \int_0^{LT} r(t+NT) S_{a_N}^*(t) dt \right|$$

wherein $r(t)$ is the baseband signal; $S_{a_N}(t)$ is the complex main pulse associated with symbol a_N in the time interval $[NT,(N+L)T]$; T is the symbol interval; N is an integer time index; and L is the non-constant duration of the continuous phase modulated signal's phase shift function in symbols.

14. (Currently Amended) A receiver as claimed in claim [~~11~~] 12, wherein the decision module in use provides the symbol for coherent demodulation based on estimated fading channel coefficients and a largest value of the decision variables.

15. (Original) A receiver as claimed in claim 14, wherein the decision module in use provides the symbol by effecting the calculation:

$$(-1)^{Nh}\,\mathrm{Re}\left[C^{*}(NT)\int_{0}^{LT} r(t+NT)S_{a_N}^{*}(t)dt\right]$$

wherein $C(NT)$ is the channel coefficient at time NT; $r(t)$ is the baseband signal; $S_{a_N}(t)$ is the complex main pulse associated with symbol a_N in the time interval $[NT,(N+L)T]$; T is the symbol interval, N is integer time index; and L is the non-constant duration of the continuous phase modulated signal's phase shift function in symbols, and h is the modulation index.

16. (Currently Amended) A receiver as claimed in claim ~~[11]~~ 12,, wherein said filter bank is a matched filter bank.

17. (Currently Amended) A receiver as claimed in claim ~~[11]~~ 12, wherein each of said filter units has an impulse response comprising a window function defined as:

$$\prod_{\substack{i=-L+1\\ i\neq 0}}^{L-1} \frac{\sin M\varphi(t-iT)}{M\sin\varphi(t-iT)}$$

wherein M is the number of all possible symbols in the continuous phase modulated signal, T is the symbol interval, L is the number of symbol intervals and $\varphi(t)$ is the phase shift function.

18. (Original) A filter bank as claimed in claim 17, wherein, said impulse response is also based on a phase shift function $a_N\varphi(t)$.

19. (Original) A filter bank as claimed in claim 18, wherein said impulse response is based upon the function:

$$\prod_{\substack{i=-L+1 \\ i\neq 0}}^{L-1} \frac{\sin M\varphi(t-iT)}{M\sin\varphi(t-iT)} \cdot e^{j\alpha_N\varphi(t)}$$